

Vortex Cabinet Coolers

Installation and operating manual

Introduction

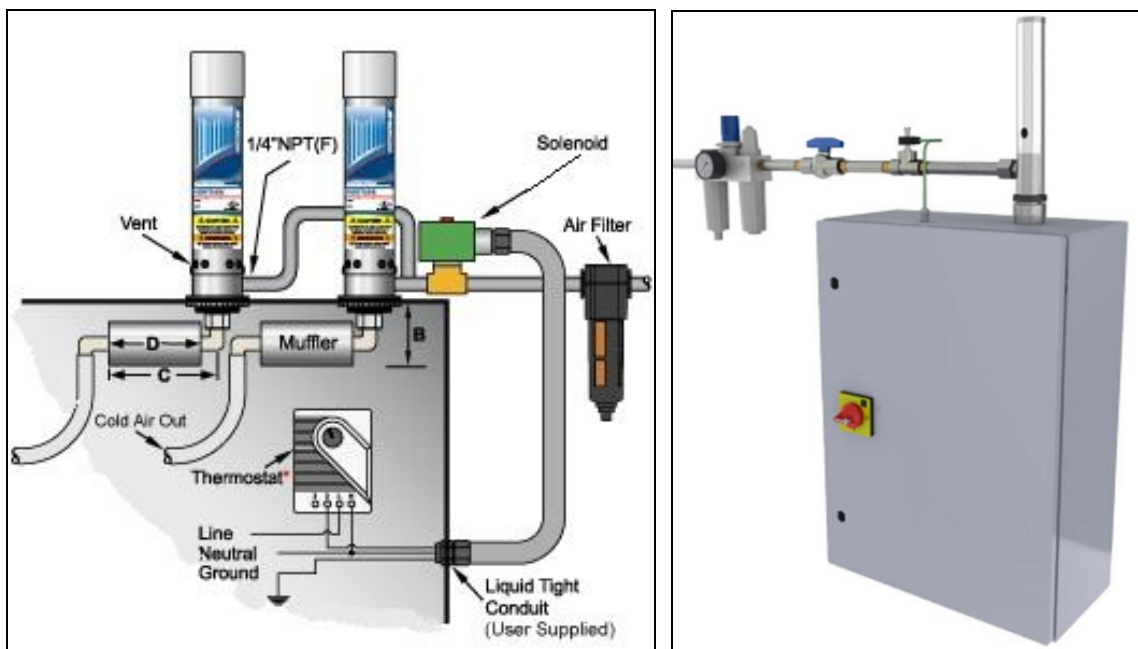
This installation and user manual describes the installation and use of Vortex cabinet coolers supplied by Fiktech.

These instructions must be available to the operating personnel at all times. Read this manual completely before installing and/or operating this product.

Follow the instructions in this guide to ensure proper product operation and any warranty claims.

The purpose of a Vortex Cabinet Cooler

- Provision of positive pressure to keep dust, moisture and gas outside of the cabinet.
- Reduction of the relative humidity to avoid condensation and to dehumidify the control cabinet.
- Cooling of the sensitive electric and electronic components.



Installing the vortex cabinet coolers

If the control cabinet is not hermetically sealed, humid ambient air may penetrate and condensation will occur inside. In order to avoid this problem, ventilation and other openings must be closed.

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VERFAHRENSOPTIMIERUNG

Vortex cabinet coolers should preferably be mounted on the flat top of a cabinet with a minimum protection rating of IP54. If this is not possible, for example because of the location of the control box (under a roof or ceiling) or for other reasons, a side mount kit can be used.

Depending on the model - IP55 or IP66 series - mount the Vortex cooler through a hole with a diameter of 30 or 27 mm, respectively. Both versions may be installed horizontally or vertically. You fasten the vortex cooler with the help of the supplied lock nut.

Only suitably qualified personnel may install or service this equipment/system and must strictly follow the installation instructions.

Cold air distribution kit

The Cold air distribution kit includes a flexible transparent hose, self-adhesive mounting clips and silencer. The flexible hose is intended to circulate the cooling air in a better way or to reach "hot spots". If desired, holes can be made in the flexible hose. If the end of the flexible hose is sealed, at least 4 holes of $\varnothing$ 4mm (200W versions) or 6 holes (290-820W versions) must be made to avoid excessive back pressure.

Compressed air: piping

The diameter of the compressed air line must be selected in such a way that pressure losses are reduced to a minimum. Use at least 3/8" piping or 1/2" hoses!

Cross-section constrictions are to be avoided, as they reduce the capacity of the vortex cooler. Do not use quick couplings!

The vortex cooler lowers the temperature of the compressed air supply by 30°C @ 7.0 bar(g) **inlet pressure**. An increased temperature of the supplied compressed air leads to a proportionally higher outlet temperature and reduces the cooling capacity. In this case, it is recommended to line the pipes with insulating material

Compressed Air: Quality

The compressed air needs to be filtered. The Vortex coolers will work for years without any maintenance if oil particles, rust and other contaminants are removed from the compressed air flow.

Use a combined water separator-filter (5 micron)/pressure reducer fitted with a pressure gauge. This must be mounted as close to the vortex cooler as possible. The Vortex coolers are designed to work with normal compressed air with a working pressure of 5.5-7.0 bar(g).

If there is oil present in the compressed air, an additional oil separator must be installed.

To limit compressed air consumption, it is advisable to integrate a thermostat and a solenoid valve in the cooling system.

Thermostat

If a thermostat (normally open contact: closes when the temperature rises) is used, it should be installed in the warmest part (top of the control cabinet).

Solenoid valve

The supply air can be shut off with a normal closed 2/2 solenoid valve. This valve is usually controlled by a thermostat, optionally by the machine control.

Continuous flushing (Purging) of the control cabinet: the solenoid valve is provided with a minimum leakage flow - about 20 NI / min. - This keeps the control cabinet continuously in overpressure, and dust and moisture are kept outside.

Malfunctions and maintenance

Vortex coolers are maintenance-free when installed correctly and using the correct quality of compressed air. If no cold air is produced, the compressed air inlet pressure should be checked.

Causes of an inlet pressure that is too low: clogged filters, pipe diameters that are too small or other cross-sectional constrictions.